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A NEW SPECIES OF *ASPHONDYLIA* (DIPTERA: CECIDOMYIIDAE) FROM COSTA RICA WITH TAXONOMIC NOTES ON RELATED SPECIES

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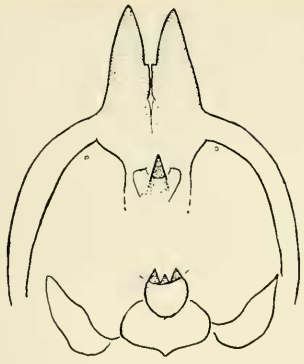
Abstract.—A new species, *Asphondylia enterolobii*, a gall former on *Enterolobium cyclocarpum* in Costa Rica, is described with illustrations. It and its closest congeners form bud and pod galls on various Mimosaceae. *Hemiasphondylia* Möhn is synonymized under *Asphondylia* and *H. mimosae*, preoccupied in *Asphondylia*, is renamed *Asphondylia mimosicola* Gagné.

This paper was intended to be simply a description of a new species, the subject of a biological study now in progress in Costa Rica. But searching a large genus for close relatives of a species often uncovers taxonomic complications as well as leads to interesting realizations of systematic relationships as related below.

The new species, *Asphondylia enterolobii*, was reared from flower galls on *Enterolobium cyclocarpum* (Jacq.) Griseb. (Mimosaceae) in Costa Rica. Specimens were submitted for identification by Dr. D. H. Janzen of the University of Pennsylvania, Philadelphia, who is interested in the biology of the gall midge in view of its apparently devastating effect on the host's seed crop production.

Interestingly, the three species most closely related to *A. enterolobii* have been reared from Mimosaceae also: *Asphondylia mimosae* Felt from bud and pod galls on *Mimosa* sp. (undet.) in Texas; *Hemiasphondylia mimosae* Möhn on bud and pod galls of *Mimosa albida* H. & B. in El Salvador; and *Asphondylia prosopidis* Cockerell from buds of *Prosopis glandulosa* Torr. in New Mexico and Texas. The four gall midge species share the derived character states of a reduced shaft of the larval spatula, the development of a pair of corniform setae on the terminal segment of the larval abdomen and anisomorphic tarsal claws. The pupae of all are similar in that they have a simple upper frontal crest and a trifid lower one, this with the medial point shortest.

Möhn (1960) erected *Hemiasphondylia* for his new species *mimosae* on the basis of the characters listed above and the fact that the sternal spatula of *mimosae* is bifid, a condition that does not obtain in *prosopidis*. I see no practical reason for segregating *H. mimosae* and the other species on Mimosaceae from *Asphondylia* and so consider *Hemiasphondylia* a synonym of *Asphondylia*. *Asphondylia mimosae* (Möhn), new combination, is consequently a secondary homonym and is renamed here *A. mimosicola* Gagné.



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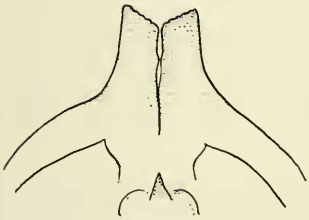

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Figs. 1–2. Pupal head of *Asphendylia enterolobii* (ventral and lateral views, respectively). Fig. 3. Pupal head of *A. prosopidis* (ventral view). Figs. 4–7. *Asphondylia enterolobii*. 4, Larval spatula. 5, Larval terminal segments (dorsal). 6, Front, middle and hind claws of female. 7, Same, of male.

Asphondylia enterolobii Gagné, new species

Adult.—Habitus and terminalia as in other *Asphondylia*. Palpus 3-segmented. Legs covered with brownish scales, unbanded. Tarsal claws (Figs. 6–7) anisomorphic, middle claws largest, front claws smallest, at least middle and hind claws enlarged near middle.

Pupa.—Head (Figs. 1–2): Antennal horns conic, tapering to point without crenulations on anteromedial surface; upper frontal crest single, lower frontal crest trifid, lateral points longer than medial point.

Larva.—Sternal spatula (Fig. 4) bifid, shaft not developed. Terminal abdominal segment (Fig. 5) with 3 papillae per side, 2 with short setae, 1 with corniform seta.

Holotype.—Pupa, ex *Enterolobium cyclocarpum* gall, 10 March 1977, Santa Rosa National Park, Guanacaste Province, Costa Rica, D. H. Janzen, USNM Type No. 75229. Paratypes: 4 ♂, 2 ♀, 21 pupae and 6 larvae, all with same data as holotype (USNM).

Discussion.—Asphondylia enterolobii is the only one of the 4 related taxa with conical pupal horns. The other species have wider, less tapered horns shaped as in *A. prosopidis* (Fig. 3) with crenulations on the anteromedial edge. The larval spatula of *enterolobii* lacks a shaft; those of *mimosicola* and *prosopidis* are quadridentate. The larva of *mimosae* is unknown.

Literature Cited

Möhn, E. 1960. Gallmücken (Diptera, Itonididae) aus El Salvador 3. Teil. Senckenbergiana Biol. 41:333–358.

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